

IN THE ABSTRACT:

Please add the following abstract of the disclosure to read as follows:

A method for a surface treatment of a metal material, which comprises subjecting a metal material such as an Fe alloy, a Ni alloy and an Al alloy to a heat treatment in the presence of an amino-based resin such as a melamine-formaldehyde resin. The amino-based resin can be caused to be present with the metal material by a method wherein the resin is applied on the surface of the metal material, directly or via a solvent such as water, or wherein the amino-based resin is placed in a container, and the container and the metal material are placed in a heat treatment furnace. The above heat treatment allows a passivated film to disappear from the metal material. Further, a subsequent elevation of temperature and the supply a nitriding gas allows the performance of a nitriding treatment being several times more effective than a conventional treatment, and a subsequent supply of a carburizing agent allows the performance of a carburizing treatment.